FOR RESEARCH AND DEVELOPMENT PURPOSES ONLY

SAFETY DATA SHEET

SECTION 1 - IDENTIFICATION

PRODUCT NAME: UVeda VIR-009-AA IR FLUORESCENT

PIGMENT

NOT REGULATED FOR TRANSPORT

UNITED MINERAL & CHEMICAL CORPORATION 1050 Wall Street West, Ste. 660, Lyndhurst, NJ 07071

Tel: 201-507-3300 Fax: 201-507-1506

e-mail: inquiry@umccorp.com

COMPANY:

RECOMMENDED USES: INFRARED FLUORESCENT PIGMENT

FOR SPECIALTY PRINTING INKS, PAINTS/ COATINGS, SECURITY APPLICATIONS

EMERGENCY TELEPHONE NO.: USA – CHEMTREC: 1-800-424-9300 Outside USA: +1 703-527-3887

SECTION 2 – HAZARD IDENTIFICATION

GHS HAZARD CLASSIFICATION:

NOT CLASSIFIED GHS LABEL ELEMENTS:

SIGNAL WORD: NO SIGNAL WORD

LABEL CODES / PICTOGRAMS: NO PICTOGRAMS

HAZARD STATEMENTS: NONE UNDER GHS CLASSIFICATION

PRECAUTIONARY STATEMENTS:

US D.O.T. / UN NAME:

PREVENTION: NONE ASSIGNED UNDER GHS
RESPONSE: NONE ASSIGNED UNDER GHS
STORAGE: NONE ASSIGNED UNDER GHS
DISPOSAL: NONE ASSIGNED UNDER GHS

OTHER HAZARDS / U.S. - HAZARDS NOT OTHERWISE CLASSIFIED / UN GHS - OTHER HAZARDS WHICH DO NOT RESULT IN CLASSIFICATION:

THE TOXICOLOGICAL PROPERTIES OF THIS SUBSTANCE HAVE NOT BEEN FULLY EVALUATED - MAY BE HARMFUL BY INHALATION, CONTACT WITH SKIN, OR IF INGESTED. USE GOOD INDUSTRIAL HYGIENE TO

MINIMIZE EXPOSURE.

SECTION 3 - COMPOSITION / INFORMATION ON INGREDIENTS

CHEMICAL COMPOSITION: COMPONENTS: CAS NO. %

GENERIC: MIXED METAL OXIDE, CHROMIUM (III) DOPED TRADE SECRET >99

[CHROMIUM (III) CONTENT ≤2%; TESTING SHOWS <1%]

SYNONYMS: NONE KNOWN

CHEMICAL FAMILY: RARE EARTH PHOSPHORS; INSOLUBLE CHROMIUM (III) COMPOUND

SECTION 4 - FIRST AID MEASURES

FIRST AID/ RESPONSE FIRST AID RESPONDERS SHOULD WEAR PERSONAL PROTECTIVE EQUPMENT

SKIN: IF ON SKIN: IMMEDIATELY WASH OFF WITH SOAP & WATER. REMOVE CONTAMINATED CLOTHING. GET

MEDICAL ADVICE/ATTENTION IF IRRITATION OCCURS

EYES: IF IN EYES: RINSE CAUTIOUSLY WITH WATER FOR SEVERAL MINUTES. REMOVE CONTACT LENSES, IF

PRESENT AND EASY TO DO. CONTINUE RINSING. GET MEDICAL ADVICE/ATTENTION IF IRRITATION OCCURS. IF INHALED: REMOVE VICTIM TO FRESH AIR AND KEEP AT REST IN A POSITION COMFORTABLE FOR

INHALATION: IF INHALED: REMOVE VICTIM TO FRESH AIR AND KEEP AT REST IN A POSITION BREATHING. GET MEDICAL ADVISE / ATTENTION IF ANY ADVERSE SYMPTOMS OCCUR.

INGESTION: IF SWALLOWED: RINSE MOUTH WITH WATER. INDUCE VOMITING ONLY UNDER THE DIRECTION OF MEDICAL

PERSONNEL. NEVER GIVE ANYTHING BY MOUTH IF THE VICTIM IS UNCONSCIOUS.

MOST IMPORTANT SYMPTOMS/EFFECTS, ACUTE AND DELAYED

AS AN INORGANIC POWDER, INHALATION OR CONTACT WITH DUST/POWDER MAY CAUSE IRRITATION

TO RESPIRATORY TRACT, SKIN, OR EYES.

INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED, IF NECESSARY

CALL A POISON CENTER/DOCTOR/PHYSICIAN IF YOU FEEL UNWELL.

SECTION 5 – FIRE FIGHTING MEASURES

SUITABLE EXTINGUISHING MEDIA: WATER: (X) FOAM: (X) CO_2 : (X) DRY CHEMICAL: (X)

USE EXTINGUISHING MEDIA SUITABLE FOR THE SURROUNDING FIRE. DO NOT ALLOW RUN-OFF

TO ENTER SEWERS OR THE ENVIRONMENT

SPECIFIC HAZARDS IN CASE OF FIRE: PRODUCT IS NOT COMBUSTIBLE. TOXIC METAL OXIDE FUMES CAN BE EVOLVED IN VERY HOT

FIRES EXCEEDING THE PRODUCT'S MELTING POINT. AVOID RELEASE TO THE ENVIRONMENT.

SPECIAL PROTECTIVE EQUIPMENT &

PRECAUTION FOR FIRE FIGHTERS:

AS IN ANY FIRE, TOXIC GASES MAY BE PRODUCED - WEAR A NIOSH APPROVED SELF-CONTAINED BREATHING APPARATUS OPERATED IN PRESSURE DEMAND OR POSITIVE

PRESSURE MODE AND FULL PROTECTIVE GEAR.

N/A = NOT APPLICABLE LOC

Date: FEBRUARY 8, 2016

SECTION 6 – ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: VENTILATE THE SPILL AREA. AVOID BREATHING DUST. WEAR FULL PROTECTIVE EQUIPMENT (SEE SECTION 8). CLEAN SPILL PROMPTLY.

ENVIRONMENTAL PRECAUTIONS: AVOID RELEASE TO THE ENVIRONMENT/DRAINS/SEWERS/BODIES OF WATER. DISPOSE OF PROPERLY.

METHODS AND MATERIAL FOR CONTAINMENT AND CLEAN UP: CAREFULLY COLLECT SPILLED MATERIAL WITH CLEAN, DRY UTENSILS OR USE VACUUM WITH HEPA FILTER. PLACE INTO CLEAN, DRY CONTAINER AND SEAL FOR PROPER DISPOSAL. AVOID GENERATING DUST. DO NOT RELEASE TO SEWERS. STREAMS OR OTHER NATURAL BODIES OF WATER.

SECTION 7 - HANDLING & STORAGE

PRECAUTIONS FOR SAFE HANDLING: USE IN WELL VENTILATED AREA TO MEET PERMISSIBLE EXPOSURE / TLV LIMITS (SEE SECTION 8). WEAR PROTECTIVE GLOVES/ EYE PROTECTION/ FACE PROTECTION (SEE SECTION 8). AVOID GENERATING DUST. DO NOT BREATHE DUST. WASH THOROUGHLY AFTER HANDLING.

CONDITIONS FOR SAFE STORAGE, INCLUDING INCOMPATIBILITIES: KEEP CONTAINER TIGHTLY CLOSED. STORE IN COOL, DRY, WELL-VENTILATED AREA. AVOID CONTACT WITH INCOMPATIBLES (SEE SECTION 10).

SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

CONTROL PARAMETERS:

EXPOSURE LIMITS: U.S. OSHA PEL: 0.5mg/m³ TWA FOR CHROMIUM (III) INORGANIC COMPOUND AS Cr U.S. ACGIH TLV: 0.5mg/m³ TWA FOR CHROMIUM (III) INORGANIC COMPOUND AS Cr

APPROPRIATE ENGINEERING CONTROLS: USE LOCAL / MECHANICAL EXHAUST TO MAINTAIN AIR CONCENTRATIONS BELOW

OCCUPATIONAL EXPOSURE STANDARDS (SEE ABOVE)

PERSONAL PROTECTIVE EQUIPMENT:

RESPIRATORY PROTECTION: USE NIOSH APPROVED RESPIRATOR SUITABLE TO MEET PERMISSIBLE EXPOSURE LIMIT.

SEE U.S. OSHA RESPIRATORY STANDARD (20 CFR 1910.134).

HAND PROTECTION: USE CHEMICAL RESISTANT GLOVES (RUBBER, PVC)

EYE PROTECTION: SAFETY GOGGLES OR GLASSES WITH SIDE SHIELDS OR FULL FACE SHIELD; HAVE ACCESS

TO AN EYEWASH FOUNTAIN

OTHER PROTECTIVE EQUIPMENT: LABCOAT; COVERALLS TO PROTECT SKIN

SECTION 9- PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: PALE GREEN POWDER FLAMMABLE LIMITS: LEL:& UEL: (N/A)

 ODOR :
 NO ODOR
 VAPOR PRESSURE (mm Hg) :
 N/A

 ODOR THRESHOLD :
 N/A
 VAPOR DENSITY (AIR=1) :
 N/A

 pH (10% WATER @ 20°C) :
 NEUTRAL
 SPECIFIC GRAVITY/DENSITY :
 7.05

MELTING POINT / FREEZING POINT (°C): >1000 (>1872°F) SOLUBILITY IN WATER (@20°C): INSOLUBLE

BOILING POINT (°C): N/A PARTITION COEFFICIENT(n-octanol/water): NO DATA

FLASH POINT (°F): N/A AUTO IGNITION TEMP. (°C): NO DATA

EVAPORATION RATÉ: N/A DECOMPOSITION TEMP.: >1000 (>1872°F)

FLAMMABILITY: NOT FLAMMABLE VISCOSITY: N/A (SOLID)

SECTION 10 – STABILITY AND REACTIVITY

REACTIVITY: NO DATA AVAILABLE

CHEMICAL STABILITY: STABLE WHEN STORED SEALED IN ORIGINAL PACKAGING UNDER RECOMMENDED

STORAGE CONDITIONS.

POSSIBLITY OF HAZARDOUS REACTIONS: NO HAZARDOUS REACTIONS KNOWN

CONDITIONS TO AVOID: NONE KNOWN

INCOMPATIBLE MATERIALS: NO INFORMATION AVAILABLE

HAZARDOUS DECOMPOSITION PRODUCTS: THERMALLY STABLE TO >1000°C (>1872°F); THERMAL DECOMPOSITION CAN RELEASE

TOXIC METAL OXIDE FUMES

SECTION 11 – TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS: THE TOXICOLOGICAL PROPERTIES OF THIS SUBSTANCE HAVE NOT BEEN FULLY EVALUATED.

MAY BE HARMFUL BY INHALATION, CONTACT WITH SKIN, OR IF INGESTED.

ROUTES OF EXPOSURE: SKIN, EYES, INHALATION, INGESTION

SKIN: AS INORGANIC POWDER, CONTACT WITH DUSTS MAY CAUSE SKIN IRRITATION
EYES: AS INORGANIC POWDER, CONTACT WITH DUSTS MAY CAUSE EYE IRRITATION
INHALATION: INHALATION OF DUSTS MAY IRRITATE NOSE, THROAT, AND RESPIRATORY TRACT.

INGESTION: INGESTION MAY IRRITATE THE GASTROINTESTINAL TRACT.

CHRONIC: NO KNOWN EFFECTS; INSOLUBLE CHROMIUM (III) COMPOUNDS ARE "UNCLASSIFIABLE AS

TO CARCINOGENICTY TO HUMANS" ACCORDING TO IARC.

ACUTE TOXICITY: TEST DATA IS NOT AVAILABLE; INSOLUBLE CHROMIUM (III) COMPOUNDS ARE USUALLY MUCH

LESS TOXIC THAN CHROMIUM (VI) COMPOUNDS

SKIN CORROSION / IRRITATION : TEST DATA IS NOT AVAILABLE SERIOUS EYE DAMAGE / IRRITATION : TEST DATA IS NOT AVAILABLE RESPIRATORY OR SKIN SENSITIZATION : TEST DATA IS NOT AVAILABLE

N/A = NOT APPLICABLE LOC

PRODUCT: UVeda VIR-009-AA IR FLUORESCENT PIGMENT Date: FEBRUARY 8, 2016 Page -3-

> **GERM CELL MUTAGENICITY:** TEST DATA IS NOT AVAILABLE

> > OSHA () **CARCINOGENICITY:** U.S. LISTED CARCINOGEN: NONE () NTP () IARC (X*) OTHER ()

* IARC-3: INSOLUBLE CHROMIUM (III) COMPOUNDS ARE "UNCLASSIFIABLE AS TO

CARCINOGENICTY TO HUMANS"

REPRODUCTIVE TOXICITY: TEST DATA IS NOT AVAILABLE

SPECIFIC TARGET ORGAN TOXICITY: NONE KNOWN **ASPIRATION HAZARD:** NO DATA AVAILABLE

INTERACTIVE EFFECTS: NO DATA AVAILABLE

SECTION 12 - ECOLOGICAL INFORMATION

AVOID RELEASE TO THE ENVIRONMENT **FCOTOXICITY** ·

TOXICITY - AQUATIC: NO TEST DATA AVAILABLE **TOXICITY TO DAPHNIA:** NO TEST DATA AVAILABLE **TOXICITY - TERRESTIAL:** NO TEST DATA AVAILABLE

PERSISTANCE & DEGRADABILITY: INORGANIC SUBSTANCE - NOT SOLUBLE IN WATER

BIOACCUMULATIVE POTENTIAL: NO TEST DATA AVAILABLE **MOBILITY IN SOIL:** NO TEST DATA AVAILABLE OTHER ADVERSE EFFECTS: NO DATA AVAILABLE

SECTION 13 – DISPOSAL CONSIDERATIONS

DISPOSAL METHODS:

DISPOSE OF CONTENTS / CONTAINER IN ACCORDANCE WITH LOCAL/ REGIONAL/ NATIONAL/ INTERNATIONAL REGULATIONS. AVOID RELEASE TO THE ENVIRONMENT. DISPOSE OF IN SEALED CONTAINERS, USING A LICENSED CHEMICAL WASTE HAULER.

SECTION 14 – TRANSPORT INFORMATION

NO (X) **RQ: (N/A)** BY ROAD OR RAIL - U.S. D.O.T. REGULATED: YES ()

IF REGULATED. UN PROPER SHIPPING NAME: HAZARD CLASS: ()

UN IDENTIFICATION NO.: () PACKING GROUP: () LABEL REQUIRED: ()

U.S. MARINE POLLUTANT: YES () SEVERE U.S. MARINE POLLUTANT: NO(X) YES () NO(X)

EMERGENCY RESPONSE GUIDE NO .: ()

INLAND B/L:

BY SEA - IMDG REGULATED: YES () NO(X) STOWAGE CATEGORY: N/A BY AIR - IATA REGULATED: YES () NO (X) PKG INSTRUCTION NO.: N/A

SPECIAL PRECAUTIONS: READ SDS BEFORE HANDLING

SECTION 15 - REGULATORY INFORMATION

U.S. TSCA: THIS PRODUCT IS OFFERED FOR RESEACH AND DEVELOPMENT PURPOSES ONLY UNDER THE REGULATIONS OF THE TOXIC SUBSTANCES CONTROL ACT. PLEASE READ THE ACCOMPANYING EPA R&D GUIDANCE BULLETIN AND LETTER.

U.S. SARA TITLE III, SECT. 313: LISTED () NOT LISTED (X)

U.S. RCRA HAZARDOUS WASTE: NO(X) YES () RCRA #: (N/A)

U.S. CERCLA: NO (X) YES () **RQ (N/A)**

U.S. DEPARTMENT OF HOMELAND SECURITY APPENDIX "A": LISTED () NOT LISTED (X)

U.S. CALIFORNIA PROPOSITION 65 LISTED: YES () NO(X)

HMIS: HEALTH (1) FLAMMABILITY (0) REACTIVITY (0)

SECTION 16 - OTHER INFORMATION

REVISION DATE: FEBRUARY 8, 2016 PREPARED BY: EHSA COORDINATOR / UNITED MINERAL & CHEMICAL CORP.

N/A=NOT APPLICABLE: LEL=LOWER EXPLOSION LIMIT: UEL=UPPER EXPLOSION LIMIT: ABBREVIATIONS / ACRONYMS:

> PEL=PERMISSIBLE EXPOSURE LIMIT; TLV=THRESHOLD LIMIT VALUE; TWA=TIME WEIGHTED AVERAGE OVER 8 HOUR WORKDAY; LD_{50} OR LC_{50} =LETHAL DOSE OR LETHAL CONCENTRATION THAT KILLS 50% OF DOSED GROUP; q=GRAM; kq=KILOGRAM; PPM=PARTS PER MILLION;

LOAEL=LOWEST OBSERVED ADVERSE EFFECT LEVEL

IN ACCORDANCE WITH GOOD PRACTICES OF PERSONAL HYGIENE, HANDLE WITH DUE CARE AND AVOID ANY UNNECESSARY CONTACT WITH THIS PRODUCT. USE RECOMMENDED PERSONAL PROTECTION WHEN HANDLING (SEE SECTION 8).

THIS INFORMATION IS BEING SUPPLIED TO YOU UNDER OSHA "RIGHT TO KNOW" REGULATION 29 CFR 1910,1200 AND IS OFFERED IN GOOD FAITH AS TYPICAL VALUES AND NOT AS PRODUCT SPECIFICATION. THE INFORMATION IS BELIEVED TO BE TRUE AND ACCURATE. NO WARRANTY, EXPRESSED OR IMPLIED, REGARDING THE ACCURACY OF THIS DATA, THE HAZARD CONNECTED WITH USE OF THE MATERIAL, OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF, IS MADE. UNITED MINERAL & CHEMICAL CORPORATION AND ITS SUPPLIERS ASSUME NO RESPONSIBILITY FOR DAMAGE OR INJURY FROM THE USE OF THE PRODUCT DESCRIBED HEREIN.

UNITED MINERAL & CHEMICAL CORPORATION

N/A = NOT APPLICABLE LOC